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Application No. 10/824,413
Amendment dated December 14, 2005
Reply to Office Action of September 15, 2005

Amendments To The Drawings:

The attached sheet of drawings includes changes to Fig. 2A. This sheet, which contains Fig. 2A, replaces the original sheet including Fig. 2A. In Fig. 2A, previously omitted reference numerals 150, 110, 104, 106 have been added.

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- REMARKS/ARGUMENTS -

Claims 1 to 19 and 22 to 30 remain in the application.

The drawings were objected to under 37 CFR 1.84(p)(5) as lacking reference signs mentioned in the description.

Attached is a replacement sheet containing Fig. 2A. Reference signs 150, 110, 104 and 106 have been added to Fig. 2A, in order to comply with 37 CFR 1.84(p)(5).

The disclosure was objected to because the specification headings were underlined.

The specification headings are no longer underlined, in compliance with 37 CFR 1.77(c).

Claims 1 to 5, 11, 13 and 15 stand rejected under 35 U.S.C. 102(b) as being anticipated by Watanabe (U.S. Patent No. 6,146,091).

This rejection is traversed on the following grounds.

The pressure differential between Watanabe's upstream cavity 96a and downstream cavity 96b is solely created through the impingement plate 92. The first pressure drop referred to by the Examiner (i.e. between the air supply and the area defined by parts 92 and 99) is common to both sides of the split cavity 96. Therefore, it does not provide any pressure difference between the upstream and the downstream cavities 96a and 96b. Each flow path has a single independent stage of pressure drop. For a given pressure drop, proper impingement cooling is only provided by a narrow range of L/d , where L is the distance from impingement plate to surface to be cooled, and d is the diameter of the cooling hole. The physical arrangement that Watanabe provides only has a single possible L , so to "adjust to different pressure", Watanabe could use (1) either more holes (which is what is suggested graphically in Fig. 2, or (2) larger holes. More holes with a properly vented cavity would give more cooling, but Watanabe does not physically provide this. More holes with more restrictive venting compared to the other cavity (which Watanabe teaches) would lead to a lower pressure drop, but the cooling would not be effective. Larger holes would give a lower pressure drop, but the cooling would not be effective.

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Furthermore, it is respectfully submitted that Watanabe's pressure partition plate 97 cannot, in use, function as a seal. Watanabe's Fig. 4 suggests that the partition plate 97 is welded or brazed to the impingement plate 92. It is respectfully submitted that if the partition plate 97 is so attached to the impingement plate 92, the arrangement cannot be assembled. However, if the partition plate is "constructed so as to be divided into a plurality of sections", as taught in Watanabe's column 8, the partition plate 97 cannot be attached to the impingement plate 92. In use, the partition plate 97 would drop down, releasing the contact between parts 97 and 92, and allowing air to flow, so there is no seal.

Finally, as recognized by the Examiner himself, Watanabe only teaches providing straight overlapping joint faces at the junction between adjacent partition plate segments (see Fig. 5).

It is respectfully submitted that independent claims 1, 13, 22 and 30, and the claims depending thereon, are patentable over Watanabe in view of at least one of the above-mentioned comments.

Claims 6 to 9, 12, 14, 16 to 20, and 22 to 31 stand rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe in view of Maier (U.S. Patent No. 5,868,398).

The Examiner relies on Maier to show that it is known to use a dogbone seal in a gas turbine shroud.

However, it is respectfully submitted that Maier does not cure in any way the above-mentioned deficiencies of Watanabe and, as such, the claims at present on file are clearly patentable over Watanabe in view of Maier.

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Should there be any questions concerning this amendment or the application in general, the Examiner is respectfully urged to telephone the undersigned so that prosecution of this application can be expedited.


Respectfully submitted,

David MEISELS

By:

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Date



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Encl. - Appendix A